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CONSUMPTION LEVEL DURING THE PERIOD OF HOLODOMOR

ABSTRACT. Territorial expansion of the 1933 famine is a matter of dispute between Ukrainian and Russian history scientists. The former regard the famine to be localized within Ukraine, while the latter adopt the position that vast regions of Russia, in particular the Volga River region and Central Chernozemic region, were affected with the famine too. To solve this matter, the author has the data engaged which concern nutrition survey conducted by Gosplan (State Planning Committee) of the USSR in 1933. These data show that the situation in Ukraine was the most disastrous. The Volga River and Central Chernozemic regions, although suffered from the famine too, were featured with consumption of food products about 1.5 times higher than that in Odessa or Kiev regions. The average daily consumption of 1070 kcal which was recorded in Odessa region in early 1933 allowed life-sustaining activity of a human being for three months only.

JEL Classification: N34

Keywords: famine, year of 1933, Ukraine, Russia, level of food consumption, nutrition survey.

Introduction

Famine in the USSR of 1933 was one of the largest national catastrophes in modern history with direct loss of human life in the range of millions. It entered the annals of history as one of its most tragic events. However, the historians still argue about the causes of hunger and its territorial distribution. It is known that in some regions of the USSR there was no food shortage, while other areas were desolated by hunger. But even in the territories, which suffered the most, hunger had different intensity. The Ukrainian historians believe that the famine mainly hit the Ukraine. They suspect that the famine was artificially engineered by Stalin to suppress the resistance of the Ukrainian peasants to collectivization (see, e.g. Kulchitskiy, 2011). In this interpretation, the question of the territorial distribution of famine acquires a certain political aspect, and this aspect complicates bilateral relations between the Ukraine and Russia. It is a well-known fact that on November 28, 2006 the Verkhovna Rada of Ukraine (the Ukrainian Parliament) adopted the «Law on Holodomor», which legally defines the Holodomor of 1932-1933 in Ukraine as «genocide of the Ukrainian people» (O Golodomore 1932-1933 godov v Ukraine, 2006). But Russia rejects such legal interpretation. The Russian historians emphasize the fact that there was a famine in the Northern Caucasus, the Volga Region and in the Central Black Earth Region (see, e.g., Kondrashin, 2008). Consequently, hunger could not be the result of the oppressive policy specifically targeting the Ukrainian people as a social entity.

Thus, the problem of territorial distribution of the 1933 famine and assessment of its intensity in different areas does not only have a historical, but also a political significance. One of the ways to determine the hunger intensity is calculation of starvation death levels in different territories and regions. Such an assessment was made by Davis and Wheatcroft (Davies & Wheatcroft, 2004, p. 422). However, as the authors acknowledge, their work was based on incomplete data obtained from the Soviet archives and statistics bureaus. Another way to get the same informations is to assess the granary harvest, i.e. the real grain harvest after deduction of all losses. The data about the real grain harvest, together with the size of grain procurement in every region were first published by Tauger (Tauger, 2001).

Comparison of these values allows defining the amount of bread remaining in the countryside and the extent of food deficit in certain regions.

However, there are also direct data available on food products consumption in various regions of the USSR. Here we mean, first of all, the data of budget surveys available in holdings of Russian State Archive of Economy (RGAE). These data are reproduced in a bulletin of Gosplan's Central Department of National Economy Accountancy (Central'noe Upravlenie Narodno-Hozjajstvennogo Ucheta – CUNHU) *Budgets of Collective Farmers for Years 1933 and 1934* (RGAE, f. 1562, op. 77, d. 5a). Partially, these data (namely the data of bread consumption in 7 regions) are reproduced in the book by Davies & Wheatcroft (Davies & Wheatcroft, 2004, p. 504). Yet peasants consumed not bread alone, and it is of interest to review dynamics of consumption taking the full range of food products for analysis.

1. Issue of data representativeness

It could seem surprising somehow that CUNHU conducted nutrition surveys and recorded extent of the famine in the foodless year of 1933; although *Not to be disclosed* label was certainly attached to the appropriate materials. Budget surveys were conducted in Byelorussia, in four Russian regions (Moscow, Leningrad, and Central Chernozemic regions and Middle Volga Territory), and in two regions of Ukraine (Kiev and Odessa regions). The following amounts of peasants' husbandries were reviewed: 770 in Byelorussia, 980 in Moscow region, 700 in Leningrad region, 1050 in Central Chernozemic region (CCR), 980 in Middle Volga territory, 560 in Kiev region and 700 in Odessa region. Collective farmers' husbandries were selected in mechanical way, by lot; they were scattered among districts of a certain region pro rata to the specific weight of certain districts in the region's population. Consumption values of food products were recorded by peasants themselves once in ten days; these records were inspected by instructors on monthly basis. Arrivals of food products were registered twice: by a farmer himself on the arrival day and by an instructor on basis of reports of the collective farm concerned. Plus, people from regional departments of national economic accountancy visited collective farms periodically to inspect work of collective farmers and instructors in full range (RGAE, f. 1562, op. 77, d. 5a, l. 1-2).

CUNHU reviewed the extent of representativeness of sample by comparing the data of collective farms wherein surveyed husbandries were included ("budget" collective farms) with average data of all collective farms in the region. The results of this comparison are shown in *Table 1* below.

Table 1. Deviation of budget collective farms' characteristics from average values assumed as 100%

Region, territory, republic	Area under crops per 100 capita in 1933	Crop yield of grains in 1933	Number of work horses per 100 Ha of land under crops in 1933	Dispensing of grain per 1 labour day in 1933	Dispensing of grain per 1 labour day in 1934
Leningrad	104,3	97,3	81,7	91,2	97,0
Moscow	95,9	103,4	110,4	94,5	77,5
CCR	101,5	104,4	102,3	95,6	112,6
Middle Volga	116,4	97,1	91,8	105,3	99,0
Byelorussia	101,3	101,6	95,5	99,3	89,3
Kiev	111,7	91,3	104,8	101,6	90,7
Odessa	104,8	100,4	118,4	100,4	79,6

Source: calculated on basis of: RGAE, f. 1562, op. 77, d. 5a, l. 3-5.

Upon considering these comparison data one can conclude that collective farms with surveyed husbandries therein did not stand out against background of the bulk of collective farms. R. Davies and S. Wheatcroft regard this sample to be representative (Davies & Wheatcroft, 2004, p. 506). Indeed, we could have agreed with it were the survey conducted in a standard situation. However, the situation in 1930s was far from being normal, and it is quite probable that primary data coming from husbandries surveyed could be further whitewashed to flatter the seniors. A work by Ye. D. Tverdyukova (2008) occurred to be the most detailed research of reliability of results of budget surveys in 1930s. Ye. D. Tverdyukova does not offer the final solution of this complicated problem, yet she reckons that "one can hardly say that the conducted surveys were accompanied with deliberate exaggeration of workers' living standards" (Tverdyukova, 2008, pp. 368-369). Moreover, data of the budget surveys about bread consumption were connected in bread-and-fodder balance sheets with data of *actual* grain milling received from collective farms' annual reports. Thus, the balances would not have matched each other, were the consumption data significantly overstated (Nefedov, 2012).

However, these arguments do not characterize the reality of situation of the year 1933 in full, when representativeness of sampling in districts of mass mortality could be interfered merely as a result of the death of these or those persons engaged into the budget surveys. It is quite obvious that in these very areas (mainly in Ukraine) data of budget surveys were overstated. The question is: to what extent? As we will see below, according to the budget surveys, the consumption level in Ukraine allowed a light-labouring person to outlast for 90-100 days only. On assumption that the consumption level was overstated by 20%, for instance, we will come to calculations showing that all Ukraine's population would have perished in this case, even those not engaged in any labour. In other words, the assumption about significant overstating of these data is *ab initio* refuted by the extremely low consumption level furnished by the data of budget surveys.

Thus, we share Ye.D. Tverdyukova's opinion that in all potential errors, "in aggregate they (*the budgets – S. N.*) still create the right idea about dynamics of population's incomes and expenses" (Tverdyukova, 2008, p. 369). Of most importance in this case is that the budgets here portray not only time-based but also territory-based dynamics. When there is no other detailed source about consumption in 1930s, "the budgets are indispensable as a data reservoir", as Ye.A. Osokina notes (Osokina, 2008, p. 50). Reliability of the budgets is not put

in doubt in books by R. Davies, S. Wheatcroft and Ye.A. Osokina, and the authors handle these data without any limitations.

2. Data of food products consumption

Budget data of food products consumption by collective farmers in 1932-1934 (disregarding the data of bread consumption) have not been published yet, so we think it is necessary to present here the detailed data of consumption of all range of food products (see *Tables 2* and *3*).

Table 2. Consumption of food products by collective farmers in the 1st and 2nd halves of 1933 (grams per capita for a month)

		Leningrad region	Moscow region	CCR	Middle Volga territory	Byelorussia	Kiev region	Odessa region
Bread and flour in terms of bread	I	20537	19506	11511	15688	11242	6222	7222
	II	19647	18731	11374	16960	12203	13146	15652
Cereals and legumes	I	1003	805	1526	1459	996	2177	1502
	II	874	870	1509	1625	1046	2190	1309
Potato	I	13891	16974	19490	7821	28715	9171	3669
	II	20674	22399	20652	12673	34406	12022	6478
Vegetables and root crops	I	4244	4687	6652	2627	4069	7917	9101
	II	5593	6943	10853	4788	4853	6960	12644
Sugar, candies	I	190	192	31	18	46	48	89
	II	140	129	100	29	52	111	134
Oil	I	34	31	51	9	20	43	121
	II	28	25	20	5	14	42	51
Melons and gourds	I	1	0	24	370	0	932	601
	II	139	17	1741	1376	98	3290	2121
Meat, all kinds	I	1179	900	588	320	1192	401	378
	II	1103	899	444	448	999	389	269
Animals' fat	I	36	12	40	8	485	182	31
	II	25	15	16	5	357	79	16
Fish	I	347	70	39	63	115	105	421
	II	261	73	41	55	119	155	209
Pure milk	I	9377	8482	6956	5954	8361	4471	5626
	II	9960	10125	10463	7273	10288	8198	6179
Skim milk	I	904	387	326	1987	1037	255	475
	II	969	151	707	1919	1098	629	717
Sour cream	I	111	47	39	89	110	28	25
	II	85	27	65	38	107	95	92
Butter	I	50	9	16	42	16	6	55
	II	36	11	26	42	15	26	114

Source: RGAE, f. 1562, op. 77, d. 5a, l. 91-92.

Table 3. Consumption of food products by collective farmers in the 1st and 2nd halves of 1934 (grams per capita for a month)

		Leningrad region	Moscow region	CCR	Middle Volga territory	Byelorussia	Kiev region	Odessa region
Bread and flour in terms of bread	I	19341	19007	13864	16828	13184	15591	18060
	II	20631	18813	13167	17992	13042	13935	14112
Cereals and legumes	I	1248	1617	2899	2704	1432	2446	2652
	II	1004	1106	2097	1818	1095	2035	1993
Potato	I	18363	20075	15631	12743	28614	8150	3433
	II	18592	23136	22423	15758	38750	17522	6093
Vegetables and root crops	I	5037	6849	10460	2916	3264	6226	8198
	II	6875	7743	10467	5690	5840	8400	11467
Sugar, candies	I	220	218	82	66	91	141	212
	II	253	256	130	64	66	320	230
Oil	I	74	52	88	18	16	63	148
	II	47	45	35	9	31	75	109
Melons and gourds	I	6	0	71	152	0	234	781
	II	341	25	1793	2689	161	3844	4820
Meat, all kinds	I	954	942	403	355	1168	438	476
	II	873	926	426	401	750	282	676
Animals' fat	I	88	11	24	2	433	167	142
	II	18	19	160	4	248	99	85
Fish	I	348	84	70	102	165	196	409
	II	326	135	72	110	163	188	410
Pure milk	I	10277	9760	8034	6174	10092	6188	4292
	II	11385	11791	10980	7929	12204	9933	5093
Skim milk	I	758	728	973	2955	1087	602	524
	II	815	483	1217	3122	1627	1298	684
Sour cream	I	82	52	59	44	145	95	91
	II	92	73	66	65	159	168	117
Butter	I	34	15	24	68	18	19	73
	II	49	16	41	80	29	64	124

Source: RGAE, f. 1562, op. 77, d. 5a, l. 91-92.

One can calculate caloric value of the mentioned range of products. To determine the products' caloric value, we will use the data from *Normal Food Composition and Nutritional Significance of Food Products* guidelines (Moscow, 1925) and the data from Food and Agriculture Organization **(**FAO, italicized in *Table 4*).

To determine the caloric value of "Bread and flour in terms of bread" mentioned in *Tables 2* and *3*, we used a standard method which was used in surveys of 1930s, namely: rye bread is converted into flour assuming that 1 kg of bread = 0.715 kg of flour; wheat bread is converted into flour assuming that 1 kg of bread = 0.785 kg of flour (RGAE, f. 1562, op. 15, d. 734, l. 1-60). From this it follows that caloric value of rye bread was taken by CUNHU as 2113 kcal, and that of wheat bread as 2579 kcal. These caloric values are slightly higher than those used by statisticians of 1920s (Normal'nyj sostav pischi, 1925, p. 40). Besides, statisticians of 1920s apparently underestimated caloric value of potato; that's why in this case we use the modernized data from FAO for today's calculations. It results in obtaining

slightly higher figures than those reported by statisticians of 1920s, when we re-calculate caloric values of the food package by our technique: e.g. if we review February 1924 in Voronezh governorate we will get to 3391 kcal a day vs. 3311 kcal a day according to the data from Central Bureau of Statistics (i.e. 2.5% higher) (Sostoyanie pitaniya, 1928, p. 118).

Table 4. Caloric value of food products assumed when calculating consumption (kcal/kg)

Food products	kcal/kg	Food products	kcal/kg
Rye flour	2955	Meat in average	*1742*
Wheat flour	3285	Animals' fat	6470
Cereals and legumes	3378	Fish in average	*860*
Potato	*670*	Pure milk	635
Vegetables	*204*	Skim milk	370
Sugar	3875	Sour cream	2482
Oil	*8517*	Butter	7795
Melons and gourds	200	Fruit	*560*

Source: Normal'nyj sostav pischi (1925, pp. 33-34); FAOSTAT, available at http:/faostat.fao.org/site/368/DesktopDefault.aspx?PageID=368#ancor, referred on 26/03/2014.

Using the data of *Table 4*, one can find caloric value of the conventional "bread" referred to in budget summaries. As surveys of 1920s show, peasants in Russian regions and Byelorussia consumed, with rare exceptions, rye bread (Sostoyanie pitaniya, 1928, p. 140). The Ukrainians consumed wheat bread as well and, if we consider proportions of rye and wheat bread consumption (Sostoyanie pitaniya, 1928, p. 140), we come to conclusion that the caloric value of bread consumed in Ukraine is equal to appr. 2188 kcal/kg.

Using these caloric values of food products listed in the table, we have the total caloric value of the food package.

Table 5. Consumption level of collective farmers in 1933-1934 in comparison with consumption level of peasants in 1924 (kcal/day)

Region, territory, republic	1933		1934		Governorate, republic	1924
	I	II	I	II		Febr.
Leningrad	2251	2325	2323	2412	Leningrad	2251
Moscow	2156	2267	2342	2392	Moscow	2156
CCR	1686	1809	1983	2099	Voronezh	1686
Middle Volga	1660	1927	2021	2151	Samara	1660
Byelorussia	1965	2172	2177	2366	Byelorussia	1965
Kiev	1149	1809	1893	2082	Ukraine	1149
Odessa	1072	1767	2017	1788		

Source: calculated on basis of *Tables 2, 3, 4*. Sostojanie pitanija sel'skogo naselenija SSSR. 1920-1924 (1925, p. 118).

It is worth noting that R. Davies and S. Wheatcroft report the figure of caloric value of consumption of Odessa region's rural population in December 1932 which was counted on basis of another source (but using budgets as well) (RGAE, f. 1562, op. 77, d. 18): 1176

kcal/day (Davies & Wheatcroft, 2004, p. 283). As we can judge from *Table 5*, this figure is close to our calculations.

The showed tables of consuming food products in 1933-1934 allow comparing the data in them with the data of consumption in 1937-1940, publicized recently (Nefedov, 2012a), and with the data of consumption in 1920s available in official reference books. In Table 5 we see the calculation of caloric value of the food package on basis of nutrition survey data in February which was made by the same technique (Sostoyanie pitaniya, 1928, p. 140). Central Statistics Bureau of the USSR (CSU SSSR) assumed the normative value of 3750 kcal per one adult "food consumer" in 1920s to be satisfactory for average conditions of rural life and work (Sostoyanie pitaniya, 1928, p. 50). The average statistical "capita" consumes food by 1.4 times less than a "food consumer"; thus, the minimum normative value for a rural "capita" is 2680 kcal a day. The minimal normative value of average per capita consumption of food assumed by World Health Organization (WHO) is much lower: it is about 2300–2400 kcal per capita a day (Naiken, 2002). Food consumption in modern India and Pakistan is about at the same level. In 1924, peasants in the USSR had much better nutrition: the caloric value of food package was 2900 to 3400 kcal a day (except for Samara governorate which hadn't yet recovered from the 1922 famine). Against this background, the picture of consumption in 1933 is a real disaster: in the 1st half of the year, during the famine in Ukraine, consumption was about 1100 kcal per one person a day, or 1540 kcal per an adult "food consumer". It is known that an adult man needs 1600 kcal just for life sustenance (less any muscular activity) (Normy fiziologicheskih potrebnostey, 2008). In case of the lightest work, this figure is 1.4 times higher, i.e. 2240 kcal; thus, there is 700 kcal deficit in such a case. Energy stores of an adult man's body are estimated in average as 165 900 kcal; as reported by physiologists, one can spend 40-45% of these stores until the organism's death (Volovich, 1983, p. 23). It is easy to compute that in conditions of the Ukrainian famine of 1933 a man engaged in light labour could sustain but for 90-100 days.

The situation in Middle Volga region and in CCR was not so tragic: the average consumption was 1700 kcal, while the consumption per one "food consumer" was 2380 kcal, which would be sufficient for doing light work. However, rural works during a sowing season required much higher energy costs, and a large part of the population in these regions suffered from starvation or malnutrition.

As for Moscow or Leningrad regions, the data of budgets speak for the fact that the famine here passed by: the average consumption level in these regions approximately conformed to WHO minimum normative value.

As data from Table 5 show, the situation in Ukraine became better in the second half of 1933 and consumption grew up appr. to 1800 kcal per capita. The famine was retreating step by step, and a considerable part of the population still suffered from it. In 1934 consumption in the whole region of disaster, in Ukraine, CCR and the Volga region, grew up appr. to 2000 kcal per capita – yet it was still much lower than WHO normative value. And for sure, nutrition of peasants cannot be compared with "blessed" times of "new economic policy" (NEP) when the consumption level was reaching 3000 kcal.

This is the situation with consumption of rural inhabitants. And what about city workers? Materials of budget surveys on workers' consumption in 1932-1933 can be found in the well-known work by Ye. A. Osokina (Osokina, 2008). However, if we compare the data of CUNHU *Workers' Budgets* (RGAE, f. 1562, op. 15, d. 1934, l. 8) with the data presented in Ye.A. Osokina's book (Osokina, 2008, p. 333), we will see that only those amounts of food products which were purchased by workers were taken into account by the author, while food derived from workers' personal husbandries were ignored. Meanwhile, the potato cultivated in workers' vegetable gardens was a significant component of their families' nutrition. In the

table below we summarized arrival of food products from all sources and counted the total caloric value of the food package.

Table 6. Consumption level of married workers in the USSR (grams per capita for a month (kcal/day)

	February 1925	1Q 1933	1Q 1934	1933 at large	1934 at large
Flour and bread in terms of flour	13771	12393	14254	13691	14420
Cereals	1316	1120	1046	1053	982
Other bread products	123	364	439	329	360
Potato	8758	7881	11710	10593	13964
Vegetables	3063	2911	3932	6209	6750
Meat	4207	1219	1145	1162	1098
Animals' fat	271	29	33	20	36
Fish	861	743	644	979	823
Milk	4797	2167	2783	3618	4291
Other dairy products		127	146	342	288
Butter	197	37	101	96	155
Eggs (pcs.)	3	8	7	38	31
Oil	357	86	74	77	56
Sugar	775	556	615	543	620
Confection	49	552	512	394	509
Fruit	209	91	150	294	609
Caloric value (kcal/day)	2523	1956	2263	2194	2391

Source: RGAE, f. 1562, op. 15, d. 1934, l. 8; Sostojanie pitanija gorodskogo naselenija SSSR v 1924-25 sel'skohozjajstvennom godu, *Trudy CSU SSSR*, Vol. 30, No 3, pp. 76-77.

For comparison's sake, Table 6 also includes the data of consumption in February 1925; in all cases, caloric value is counted by the unified technique mentioned above. Data from Table 6 speak for the fact that the crisis rebounded on urban population too: in Q1 1933 consumption of workers' families dropped down to 1956 kcal per capita. Yet in general it remained to be much higher than that in rural districts; at the same time, one should keep in mind that in usual years urban inhabitants consumed less calories than rural ones (Losickij, 1927, p. 18). It can be seen, in particular, from the comparison of caloric values of nutrition in cities and countryside in 1924-1925 (see *Table 5* and *Table 6*). In 1934 consumption of workers' families grew up somehow but didn't reach the 1925 level. At the same time, the structure of nutrition changed drastically: meat consumption decreased by 4 times, while bread consumption increased.

Conclusions

Thus, the data of budget surveys confirm conclusions of Ukrainian researches. The 1933 famine was explicitly localized, with Ukraine as its epicentre. Although the Holodomor area spread to the Volga region and Central Chernozemic region, consumption in these regions was 1.5 times higher than that in Kiev and Odessa regions (unfortunately, budget surveys do not report data of the Northern Caucasus). As for Moscow and Leningrad, these capitals faced just small difficulties in food procurement; consumption in these regions was supported on a satisfactory level.

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